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Maine Agricultural Experiment Station

BULLETIN No. 80. FEBRUARY, 1902.

FEEDING STUFF INSPECTION.

This Bulletin contains the analyses of samples of Feeding Stuffs received from correspondents and collected by the inspectors in the fall and early winter, 1901-2.

Requests for the Bulletins should be addressed to the
AGRICULTURAL EXPERIMENT STATION,
Orono, Maine.

MAINE

AGRICULTURAL EXPERIMENT STATION

ORONO, MAINE.

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FEEDING STUFF INSPECTION.

CHAS. D. WOODS, Director.

J. M. BARTLETT, chemist in charge of inspection analyses.

CHIEF REQUIREMENTS OF THE LAW.

The points of the law of most interest to dealer and consumer are:

Kinds of Feed coming within the Law. The law applies to *all feeding stuffs except* hays and straws; whole seeds and meals of wheat, rye, barley, oats, Indian corn, buckwheat and broom corn; wheat, buckwheat and rye brans or middlings *not mixed with other substances,* but sold separately, as distinct articles of commerce.

Inspection tax and tag. To meet the expenses of inspection, a tax of ten cents per ton must be paid to the Director of the Maine Agricultural Experiment Station, who is required to furnish a tag stating that all charges have been paid. This tag, which bears the Director's signature, shows that the tax has been paid but is *not a guarantee of the quality of the goods.*

The brand. Each package of feeding stuff included within the law shall have affixed the inspection tax tag and shall also bear, conspicuously printed: the number of net pounds contained in the package, the name or trade mark under which it is sold, the name of the manufacturer or shipper, the place of manufacture, the place of business of manufacturer or shipper, the percentage of crude protein, the percentage of crude fat. These statements may be printed directly on the bag, on a tag attached to the package, or on the back of the inspection tax tag furnished by the Director of the Station. The quality of the goods is guaranteed by the manufacturer, importer or dealer, *and not by the Station.* The samples collected and analyzed by the Station show whether the goods are up to guarantee or not.

In the pages which follow there are given the results of the analyses of samples sent in by correspondents and collected by the Station inspector in the fall and early winter of 1901-02. The results of the analyses are discussed on pages 54 and beyond.

MANUFACTURERS AND PLACE OF SAMPLING.

Station number.	Manufacturer or Jobber.	Manufactured at	Sampled at
9375	R. W. Biggs & Co	Memphis, Tenn	Bangor
9376	R. W. Biggs & Co	Memphis, Tenn	South Paris
9377	R. W. Biggs & Co	Memphis, Tenn	Cornish
9365	R. W. Biggs & Co	Memphis, Tenn	Cumberland
9378	F. W. Brodé & Co	Memphis, Tenn	Camden
9379	F. W. Brodé & Co	Memphis, Tenn	Winterport
9380	F. W. Brodé & Co	Memphis, Tenn	Belfast
9381	F. W. Brodé & Co	Memphis, Tenn	Portland
9382	F. W. Brodé & Co	Memphis, Tenn	Brunswick
9383	F. W. Brodé & Co	Memphis, Tenn	Bath
9384	F. W. Brodé & Co	Memphis, Tenn	Portland
9385	Chapin & Co	St. Louis, Mo	Stroudwater
9330	Doten Grain Co		Dixfield
9328	Doten Grain Co		Portland
9304	Humphreys, Goodwin & Co	Memphis, Tenn	Newport
9386	Humphreys, Goodwin & Co	Memphis, Tenn	Richmond
9387	Humphreys, Goodwin & Co	Memphis, Tenn	Brunswick
9458	Humphreys, Goodwin & Co	Memphis, Tenn	Mt. Vernon
9388	Hunter Brothers	St. Louis, Mo	Bangor
9389	Hunter Brothers	St. Louis, Mo	Lewiston
9390	Hunter Brothers	St. Louis, Mo	Dexter
9391	Hunter Brothers	St. Louis, Mo	Corinna
9392	Hunter Brothers	St. Louis, Mo	Hiram
9393	J. E. Soper & Co	Boston	Bangor
9394	J. E. Soper & Co	Boston, Mass	Bangor
9395	J. E. Soper & Co	Boston, Mass	Norway
9396	J. E. Soper & Co	Boston, Mass	Augusta
9397	J. E. Soper & Co	Boston, Mass	Portland
9559	J. E. Soper & Co	Boston	Macwahoc
9367	The American Cotton Oil Co	Brinkley, Ark	Macwahoc
9368	The American Cotton Oil Co	Brinkley, Ark	Corinna
9369	The American Cotton Oil Co	Little Rock, Ark	Norway
9370	The American Cotton Oil Co	Little Rock, Ark	Yarmouth
9371	The American Cotton Oil Co	Little Rock, Ark	Freeport
9329	The American Cotton Oil Co	Pine Bluff, Ark	Dixfield
9305	The American Cotton Oil Co	St. Louis, Mo	Newport
9324	The American Cotton Oil Co	St. Louis, Mo	Detroit
9306	The American Cotton Oil Co	Jackson, Tenn	Newport
9372	The American Cotton Oil Co	Jackson, Tenn	Old Town
9373	The American Cotton Oil Co	Memphis, Tenn	Auburn
9374	The American Cotton Oil Co	Memphis, Tenn	Rockland
9301	The American Cotton Oil Co		Howes Corner
9302			Howes Corner
9307			Newport
9321			South Dover
9322	L. N. Littlehale		Rockland
9366	Noyes & Pearson		West Falmouth
9398	B. F. Parrott		Augusta
9399	E. D. Walker		Brownfield
9400	Warren Bruce		Augusta
9401	W. B. & E. P. Kendall		Bowdoinham

ANALYSES OF SAMPLES.

Name of Feed.	Protein.		Fat.		Station number.
	Found—per cent.	Guaranteed—per cent.	Found—per cent.	Guaranteed—per cent.	
"Canary" Brand Cotton Seed Meal	47.06	43.00	9.21	9.00	9375
"Canary" Brand Cotton Seed Meal	46.31	43.00	9.26	9.00	9376
"Canary" Brand Cotton Seed Meal	46.50	43.00	10.27	9.00	9377
"Canary" Brand Cotton Seed Meal	46.25	43.00	12.58	9.00	9365
Owl Brand Pure Cotton Seed Meal	47.31	43.00	9.76	9.00	9378
Owl Brand Pure Cotton Seed Meal	47.44	43.00	8.79	9.00	9379
Owl Brand Pure Cotton Seed Meal	44.38	43.00	10.37	9.00	9380
Owl Brand Pure Cotton Seed Meal	47.75	43.00	8.79	9.00	9381
Owl Brand Pure Cotton Seed Meal	43.06	43.00	10.39	9.00	9382
Owl Brand Pure Cotton Seed Meal	45.25	43.00	8.09	9.00	9383
Cotton Seed Meal	46.13	....	8.37	....	9384
Cotton Seed Meal	45.63	43.00	8.04	9.00	9385
"Star Brand" Cotton Seed Meal	47.13	43.00	10.26	9.00	9330
Cotton Seed Meal	47.50	43.00	9.15	9.00	9328
"Dixie" Brand Cotton Seed Meal	43.88	43.00	9.83	9.00	9304
"Dixie" Brand Cotton Seed Meal	44.00	43.00	10.27	9.00	9386
"Dixie" Brand Cotton Seed Meal	44.00	43.00	8.42	9.00	9387
"Dixie" Brand Cotton Seed Meal	45.65	43.00	10.39	9.00	9458
Cotton Seed Meal	45.88	43.00	9.78	9.00	9388
Cotton Seed Meal	47.63	43.00	10.90	9.00	9389
Cotton Seed Meal	46.69	43.00	10.77	9.00	9390
Cotton Seed Meal	49.31	43.00	8.13	9.00	9391
Cotton Seed Meal	44.88	43.00	10.42	9.00	9392
Cotton Seed Meal	47.63	43.00	8.44	9.00	9393
Cotton Seed Meal	42.88	43.00	8.53	9.00	9394
Cotton Seed Meal	48.63	43.00	10.30	9.00	9395
Cotton Seed Meal	44.06	43.00	10.16	9.00	9396
Cotton Seed Meal	42.69	43.00	8.44	9.00	9397
Cotton Seed Meal	46.88	43.00	8.75	9.00	9559
Prime Cotton Seed Meal	44.56	43.00	10.68	9.00	9367
Prime Cotton Seed Meal	45.13	43.00	10.47	9.00	9368
Prime Cotton Seed Meal	44.00	43.00	8.73	9.00	9369
Prime Cotton Seed Meal	45.13	43.00	8.87	9.00	9370
Prime Cotton Seed Meal	44.25	43.00	9.03	9.00	9371
Prime Cotton Seed Meal	46.00	43.00	10.44	9.00	9329
Prime Cotton Seed Meal	45.38	43.00	10.37	9.00	9305
Prime Cotton Seed Meal	46.25	43.00	9.90	9.00	9324
Prime Cotton Seed Meal	40.00	43.00	9.75	9.00	9306
Prime Cotton Seed Meal	43.25	43.00	9.66	9.00	9372
Prime Cotton Seed Meal	44.63	43.00	9.81	9.00	9373
Prime Cotton Seed Meal	42.50	43.00	10.68	9.00	9374
Prime Cotton Seed Meal	46.94	43.00	11.27	9.00	9301
Cotton Seed Meal	46.00	....	9.47	....	9302
Cotton Seed Meal	44.75	43.00	8.45	9.00	9307
Cotton Seed Meal	44.75	....	10.41	....	9321
Cotton Seed Meal	46.25	....	9.86	....	9322
Green Diamond Brand Cotton Seed M'l	45.13	43.00	12.91	9.00	9366
Green Diamond Brand Cotton Seed M'l	46.88	43.00	8.19	9.00	9398
Green Diamond Brand Cotton Seed M'l	45.63	43.00	8.65	9.00	9399
Star Brand Prime FinelyG'd Cot. S'd M'l	47.25	43.00	10.11	9.00	9400
Star Brand Prime FinelyG'd Cot. S'd M'l	44.63	43.00	11.98	9.00	9401

MANUFACTURERS AND PLACE OF SAMPLING.

Station number.	Manufacturer or Jobber.	Manufactured at	Sampled at
9402	F. G. Gerry & Co		Dexter
9408	Oscar Holway Co		Auburn
9403	R. H. Soule		South Windham
9404	C. A. Hooker		Bath
9344	A. W. Gilman & Co		Foxcroft
9407	A. W. Gilman & Co		Foxcroft
9406	Ginn & Field Co		Belfast
9319	S. A. & J. H. True Co		Boothbay
9405	Saco Grain Co		Saco
9409	Glucose Sugar Refining Co		Biddeford
9412	Glucose Sugar Refining Co		Bangor
9414	Glucose Sugar Refining Co		Brownfield
9415	Glucose Sugar Refining Co		Portland
9416	Glucose Sugar Refining Co		Corinna
9417	Glucose Sugar Refining Co		Auburn
9413	Glucose Sugar Refining Co		Belfast
9418	Glucose Sugar Refining Co		Dexter
9419	Charles Pope Glucose Co		Lewiston
9420	Charles Pope Glucose Co		Gardiner
9421	Charles Pope Glucose Co		Saco
9422	Charles Pope Glucose Co		Stroudwater
9423	Charles Pope Glucose Co		Brunswick
9424	Charles Pope Glucose Co		Portland
9425	Charles Pope Glucose Co		South Brewer
9426	National Starch Co	Buffalo, N. Y.	Westbrook
9427	National Starch Co	Buffalo, N. Y.	Norway
9428	National Starch Co	Des Moines, Iowa	Richmond
9429	National Starch Co	Des Moines, Iowa	Lewiston
9430	National Starch Co	Des Moines, Iowa	Auburn
9431	National Starch Co	Indianapolis, Ind.	Richmond
9432	National Starch Co	Indianapolis, Ind.	South Windham
9433	National Starch Co	Indianapolis, Ind.	Corinna
9434	Glucose Sugar Refining Co		Biddeford
9435	Glucose Sugar Refining Co		West Falmouth
9436	Glucose Sugar Refining Co		Waterville
9437	Glucose Sugar Refining Co		Biddeford
9438	National Starch Co		Norway
9439	Glucose Sugar Refining Co		Biddeford
9441	Glucose Sugar Refining Co		Belfast
9440	Glucose Sugar Refining Co		Brunswick
9442	American Milling Co	Riverdale, Ill	Auburn
9443	J. W. Barwell	Waukegan, Ill	Corinna
9444	American Linseed Co	Chicago, Ill	Lewiston
9445	American Linseed Co	Chicago, Ill	Hallowell
9446	American Linseed Co	Chicago, Ill	Bangor
9447	Hunter Brothers	St. Louis, Mo	Brunswick
9448	Hunter Brothers	St. Louis, Mo.	Portland
9449	Gordon & Henry		Readfield
9450	Hunter, MacMaster Co		Pittsfield
9451	American Agricul. Chem. Co	Boston, Mass	Hiram
9452	American Agricul. Chem. Co	Boston, Mass	Bangor
9338	The Bowker Co	Boston, Mass	Newport

ANALYSES OF SAMPLES.

Name of Feed.	Protein.		Fat.		Station number.
	Found—per cent.	Guaranteed—per cent.	Found—per cent.	Guaranteed—per cent.	
Cotton Seed Meal	44.38	....	7.75	....	9401
Cotton Seed Meal	43.00	43.00	9.54	9.00	9408
Cotton Seed Meal	46.75	....	7.70	....	9402
Cotton Seed Meal	46.06	....	10.52	....	9404
Cotton Seed Meal	46.94	....	11.68	....	9344
Cotton Seed Meal	47.44	....	10.61	....	9407
Cotton Seed Meal	46.13	.. ..	11.13	....	9406
Cotton Seed Meal	43.06	41.00	9.60	9.00	9319
Cotton Seed Meal	46.44	41.00	8.31	9.00	9405
Chicago Gluten Meal	36.69	38.00	6.33	3.00	9409
Chicago Gluten Meal	37.25	38.00	4.85	3.00	9412
Chicago Gluten Meal	36.75	38.00	4.31	3.00	9414
Chicago Gluten Meal	35.81	38.00	4.73	3.00	9415
Chicago Gluten Meal	37.38	38.00	1.27	3.00	9416
Chicago Gluten Meal	33.69	38.00	2.72	3.00	9417
Chicago Gluten Meal	35.31	39.00	5.12	2.00	9413
Chicago Gluten Meal	37.38	39.00	1.30	2.00	9418
Cream Gluten Meal	36.88	34.12	4 41	3.20	9419
Cream Gluten Meal	40.69	34.12	5.30	3.20	9420
Cream Gluten Meal	40.63	34.12	5.51	3.20	9421
Cream Gluten Meal	37.06	34.12	3.87	3.20	9422
Cream Gluten Meal	34.69	34.12	4.14	3.20	9423
Cream Gluten Meal	33.38	34.12	4.89	3.20	9424
Cream Gluten Meal	41.44	34.12	1.14	3.20	9425
King Gluten Meal	36.94	36.00	2.57	3.2	9426
King Gluten Meal	33 75	36.00	3.62	3.2	9427
King Gluten Meal	37.69	32.4	2.25	3.7	9428
King Gluten Meal	37.63	39.00	4.27	3.5	9429
King Gluten Meal	34.00	32.4	2.81	3.7	9430
King Gluten Meal	31.63	36 00	3.04	4.3	9431
King Gluten Meal	38.00	35.6	3.99	4.28	9432
King Gluten Meal	34.50	35.6	3.00	4.28	9433
Davenport Gluten Feed	26.69	27.5	4.92	3.3	9434
Davenport Gluten Feed	25.25	27.5	4.92	3.3	9435
Davenport Gluten Feed	23.31	27.5	4.67	3.3	9436
Buffalo Gluten Feed	25.88	27.5	5.55	3.3	9437
Queen Gluten Feed	24.19	23.6	1.95	2.2	9438
Germ Oil Meal	22.13	25.5	10.41	10.5	9439
Germ Oil Meal	24.06	25.5	12.70	10.5	9441
Germ Oil Meal	22.94	25.3	10.30	3.00	9440
Sucrene Oil Meal	28.25	25.00	7.34	3.5	9442
Blatchford's Calf Meal	26.00	26.00	4.91	5.00	9443
Cleveland Flax Meal	39.88	37.5	1.57	1.00	9444
Cleveland Flax Meal	38.69	37.5	2.03	1.00	9445
Cleveland Flax Meal	40.50	37.5	2.21	1.00	9446
Linseed Meal	33.88	34.00	9.41	6.5	9447
Linseed Meal	34.19	34.00	9.13	6.5	9448
Linseed Oil Meal	38.06	38.00	2.70	1.00	9449
Linseed Oil Meal	36.56	... .	1.74	....	9450
Bradley's Superior Meat Meal	47.69	40.00	9.50	8.00	9451
Bradley's Superior Meat Meal	52.63	40.00	8.88	8.00	9452
Bowkers Animal Meal	37.06	30.00	9.14	5.00	9338

MANUFACTURERS AND PLACE OF SAMPLING.

Station number.	Manufacturer and Jobber.	Manufactured at	Sampled at
9453	The Bowker Co	Boston, Mass	Fryeburg
9454	The Bowker Co	Boston, Mass	Bangor
9455	Lowell Fertilizer Co		Bangor
9333	E. J. Philbrick	Augusta, Maine	Augusta
9456	D. W. Romaine	New York City	West Falmouth
9457	Noyes & Pearson		West Falmouth
9364	Kendall & Whitney		Portland
9459	American Cereal Co	Chicago, Ill	Camden
9461	American Cereal Co	Chicago, Ill	Westbrook
9462	American Cereal Co	Chicago, Ill	Bath
9460	American Cereal Co	Chicago, Ill	Augusta
9463	American Cereal Co	Chicago, Ill	Brunswick
9464	American Cereal Co	Chicago, Ill	Bath
9465	American Cereal Co	Chicago, Ill	Richmond
9466	American Cereal Co	Chicago, Ill	Cornish
9467	American Cereal Co	Chicago, Ill	Westbrook
9468	American Cereal Co	Chicago, Ill	Westbrook
9469	Ellsworth & Co	Buffalo, N. Y	Portland
9470	Ellsworth & Co	Buffalo, N. Y	Bucksport
9471	Ellsworth & Co	Buffalo, N. Y	Hallowell
9553	Ellsworth & Co	Buffalo, N. Y	Hallowell
9472	Great Western Cereal Co	Muscatine, Iowa	Saco
9473	W. H. Haskell & Co	Toledo, Ohio	Cumberland
9474	H. R. Heath & Son	Fort Dodge, Iowa	Cornish
9475	H. R. Heath & Son	Fort Dodge, Iowa	Bangor
9476	H. R. Heath & Son	Fort Dodge, Iowa	Portland
9477	The H-O Co	Buffalo, N. Y	Westbrook
9478	The H-O Co	Buffalo, N. Y	Westbrook
9479	The H-O Co	Buffalo, N. Y	Westbrook
9480	The H-O Co	Buffalo, N. Y	Westbrook
9481	Norton, Chapman & Co	Boston, Mass	Bath
9411			Gore
9303			Howes Corner
9482	Kentucky Milling Co	Henderson, Ky	Fryeburg
9484	Kentucky Milling Co	Henderson, Ky	Bath
9358	Kentucky Milling Co	Kenderson, Ky	Newport
9308	Kentucky Milling Co	Henderson, Ky	Newport
9347	Judson Bangs	Henderson, Ky	Sabattus
9348	A. C. McCrillis		Norway
9483	A. E. Schurtleff		South Paris
9486	R. H. Soule		South Windham
9488	J. B. Ham & Co		Lewiston
9489	O. Holway & Co		Auburn
9491	C. A. McKenney		Winterport
9492	F. S. Wingate		Hallowell
9352	Kensell & Tabor		Portland
9323	Doten Grain Co		Waterville
9320	Doten Grain Co.		Newport
9312	C. W. Getchell		Newport
9318	H. A. Hobbs		Portland
9493	Acme Milling Co	Acme, Ind	Foxcroft
9494	American Cereal Co	Chicago, Ill	Biddeford

ANALYSES OF SAMPLES.

Names of Feed.	Protein.		Fat.		Station number.
	Found—per cent.	Guaranteed—per cent.	Found—per cent.	Guaranteed—per cent.	
Bowker's Animal Meal	41.38	30.00	9.34	5.00	9453
Bowker's Animal Meal	39.19	30.00	9.08	5.00	9434
Old Fashioned Beef Scrap	45.81	40.00	25.80	15.00	9455
Philbrick's Meat Meal	29.25	....	....	....	9333
Smith & Romaines Evaporated Boiled Beef and Bone for Poultry	38.63	45.00	18.98	15.00	9456
Beef Scrap for Poultry	65.19	50.00	10.26	9.00	9457
Beef Scrap	62.63	... .	18.12	....	9364
Quaker Dairy Feed	14.25	12.03	3.83	2.50	9459
Quaker Dairy Feed	14.13	12.03	4.25	2.50	9461
Quaker Dairy Feed	14.19	12.03	3.92	2.50	9462
Quaker Dairy Feed	12.88	13.00	4.18	3.25	9460
Victor Corn and Oat Feed	9.44	8.23	3.75	3.00	9463
Victor Corn and Oat Feed	8.38	8.23	4.65	3.00	9464
Victor Corn and Oat Feed	9.63	8.23	4.38	3.00	9465
Victor Corn and Oat Feed	10.94	8.23	4.62	3.00	9466
Vim Oat Feed	10.31	6.3	2.83	2.38	9467
Schumacher's F. S. Stock Feed or Corn Oats and Barley	12.56	10.72	5.07	3.26	9468
De-Fi Corn and Oat Feed	9.63	8.30	3.29	3.00	9469
De-Fi Corn and Oat Feed	12.19	8.30	3.73	3.00	9470
De-Fi Corn and Oat Feed	9.94	8.30	3.19	3.00	9471
De-Fi Corn and Oat Feed	10.25	8.30	3.99	3.00	9553
Friend's Concen. Kiln Dried Dairy Food	8.81	10.9	3.41	3.7	9472
Haskell's Oat Feed	10.19	12.00	6.10	6.25	9473
Yankee Corn and Oat Feed	7.56	8.96	2 73	4.33	9474
Yankee Corn and Oat Feed	7.44	8.96	2.86	4.33	9475
Yankee Corn and Oat Feed	7.81	8.96	2.89	4.33	9476
The H-O Co.'s Dairy Feed	18.81	18.00	4.12	4.5	9477
The H-O Co.'s Horse Feed	13.06	12.00	4.74	4.5	9478
The H-O Co.'s Poultry Feed	18.19	17.00	5.05	5.5	9479
The H-O Co.'s Scratching Feed for Poul.	13.19	... .	4.17	....	9480
Argyle Oat Feed	6.00	12.03	2.09	2.50	9481
Viking's Dairy Feed	6.06	... .	2.63	....	9411
Corn and Oat Feed	9.00	....	5.31	....	9303
Jersey Mixed Feed	11.81	12.00	3.69	3.00	9482
Jersey Mixed Feed	10.00	....	2.14	....	9484
Jersey Mixed Feed	10.25	....	3.52	....	9358
Jersey Mixed Feed	11.25	11.50	3.59	3.50	9308
Kentucky Mixed Feed	11.81	....	4.05	....	9347
Kentucky Mixed Feed	12.81	....	4.38	....	9348
Kentucky Mixed Feed	12.31	....	3 40	....	9483
Mixed Feed	11.50	....	2.85	....	9486
Mixed Feed	11.38	....	3.61	....	9488
Mixed Feed	11.19	....	2.58	....	9489
Mixed Feed	11.69	....	3.54	....	9491
Mixed Feed	11.94	....	3.74	....	9492
Mixed Feed	10.75	....	....	....	9352
Mixed Feed	7.25	....	....	....	9323
Mixed Feed	8.26	....	....	....	9320
Mixed Feed	11.50	....	....	....	9312
Mixed Feed	11.13	....	....	....	9318
Acme Feed	16.94	....	....	....	9493
Buckeye Wheat Feed	17.81	18.21	....	....	9494

MANUFACTURERS AND PLACE OF SAMPLING.

Station number.	Manufacturer or Dealer.	Manufactured at	Sampled at
9495	American Cereal Co	Chicago, Ill	Camden
9496	Ansted & Burke	Springfield, Ohio	Camden
9497	R. H. Soule		South Windham
9498	C. B. Cummings & Son		Norway
9499	Blish Milling Co	Seymour, Ind	Portland
9500	Blish Milling Co	Seymour, Ind	Lewiston
9296	Commercial Milling Co	Detroit, Mich	Brownville
9501	W. A. Coombs Milling Co	Coldwater, Mich	South Windham
9502	Halle & Sons	Iona & Lyons, Mich	Norway
9503	Hunter Brothers	St. Louis, Mo	Winthrop
9504	Imperial Mill Co	Duluth, Minn	Bath
9505	King Milling Co	Lowell, Mich	Norway
9506	Lawrenceburg Roller Mills Co.	Lawrenceburg, Ind	Bath
9334	Henry Littlefield & Co		Portland
9336	Henry Littlefield & Co		Portland
9507	Minkota Milling Co	Minkota, Minn	West Falmouth
9508	R. P. Moore Milling Co	Princeton, Ind	Biddeford
9509	Portland Milling Co	Portland, Mich	Hiram
9510	Portland Milling Co	Portland, Mich	Foxcroft
9332	Portland Milling Co	Portland, Mich	
9356	Portland Milling Co	Portland, Mich	Newport
9511	M. G. Rankin & Co	Milwaukee, Wis	Bath
9357	M. G. Rankin & Co	Milwaukee, Wis	Newport
9512	M. G. Rankin & Co	Milwaukee, Wis	Portland
9513	F. W. Stock	Hillsdale, Mich	Brownfield
9361	David Stott	Detroit, Mich	Newport
9514	Valley City Milling Co	Grand Rapids, Mich	Brownfield
9345	Valley City Milling Co	Grand Rapids, Mich	Cumberland
9515	Walsh DeRoo Milling Co		Waterville
9516	Washburn & Crosby Co	Minneapolis, Minn.	Portland
9517	Washburn & Crosby Co.	Minneapolis, Minn.	Norway
9518	Andrews & Horigan Co.		Biddeford
9519	C. E. Fox		Fryeburg
9520	C. H. Reed		Richmond
9521	E. D. Walker		Brownfield
9326			Mars Hill
9327			Silver's Mills
9317	Zenith Milling Co		Portland
9490	Ginn & Field		Belfast
9346			Cumberland
9485	D. & C. E. Scribner		Brunswick
9487	Frye & Porter		Camden
9522	Albion Milling Co	Albion, Mich	Saco
9523	C. B. Cummings & Son		Norway
9295	Fenton Milling Co.	Fenton, Mich	Brownville
9524	Dow and King	Springfield, Ill	Lewiston
9525	Goshen Milling Co	Goshen, Ind	Norway
9526	Hicks Brown Milling Co.	Minneapolis, Minn	Augusta
9527	Hunter Brothers	St. Louis, Mo	Winthrop
9528	Hunter Brothers	St. Louis, Mo	Readfield
9315	E. Merritt & Sons	Houlton, Maine	Houlton
9529	Northwestern Consol. Mill. Co.	Minneapolis, Minn.	Hiram

ANALYSES OF SAMPLES.

Name of Feed.	Protein.		Fat.		Station number.
	Found—per cent.	Guaranteed—per cent.	Found—per cent.	Guaranteed—per cent.	
Buckeye Wheat Feed	17.81	18.21	......	......	9495
Mixed Feed	17.56	......	......	......	9496
Ballard's Mixed Feed	17.81	......	......	......	9497
Ballard's Mixed Feed	17.56	......	......	......	9498
Mixed Feed	17.63	......	......	......	9499
Winter Wheat Mixed Feed	17.56	......	......	......	9500
Fancy Winter Wheat Mixed Feed	16.75	......	......	......	9296
Mixed Feed	16.81	......	......	......	9507
Fancy Bran and Middlings	17.56	......	......	......	9502
Sunshine Mixed Feed	15.94	......	......	......	9503
Boston Mixed Feed	19.44	......	......	......	9504
Choice Mixed Feed	17.56	......	......	......	9505
Snowflake Mixed Feed	17.81	......	......	......	9506
Maine Mixed Feed	17.88	......	......	......	9334
Portland Mixed Feed	17.69	......	......	......	9336
Best Minkota Mixed Feed	18.38	......	......	......	9507
King Feed	16.56	......	......	......	9508
Champion Mixed Feed	16.94	......	......	......	9509
Champion Mixed Feed	16.06	......	......	......	9510
Champion Mixed Feed	16.00	......	......	......	9332
Champion Mixed Feed	16.70	......	......	......	9356
Elgin Pure Bran and Middlings	18.31	......	......	......	9511
Elgin Pure Bran and Middlings	18.50	......	......	......	9357
Standard Mixed Feed	17.81	......	......	......	9512
M. F. Mixed Feed	17.19	......	......	......	9513
Stott's Mixed Feed	14.63	......	......	......	9361
Farmer's Fav. Mixed Win. Wh't Cow F'd	16.31	......	......	......	9514
Farmer's Fav. Mixed Win. Wh't Cow F'd	17.19	......	......	......	9345
Mixed Feed	16.25	......	......	......	9515
Superior Mixed Feed	17.88	......	......	......	9516
Superior Mixed Feed	19.56	......	......	......	9517
Winter Wheat Crescent Mixed Feed	17.19	......	......	......	9518
Winter Wheat Crescent Mixed Feed	17.75	......	......	......	9519
S. Pure Wheat Bran and Middlings	17.31	......	......	......	9520
Kehlor Brand Mixed Feed	17.06	......	......	......	9521
Mixed Feed	16.50	......	......	......	9326
Mixed Feed	16.38	......	......	......	9327
Winter Wheat Mixed Feed	17.88	......	......	......	9317
Mixed Feed	15.56	......	......	......	9490
Mixed Feed	15.50	......	......	......	9346
Mixed Feed	14.44	......	......	......	9485
B. Mixed Feed	17.56	......	......	......	9487
Winter Wheat Bran	14.81	......	......	......	9522
Ballard's Bran	16.19	......	......	......	9523
Bran	15.44	......	......	......	9295
Winter Wheat Bran	14.69	......	......	......	9524
Bran	17.19	......	......	......	9525
Bran	18.06	......	......	......	9526
Empire Bran	16.19	......	......	......	9527
Hunter's Extra Bran	17.56	......	......	......	9528
Bran	12.75	......	......	......	9315
Bran	17.19	......	......	......	9529

MANUFACTURERS AND PLACE OF SAMPLING.

Station number.	Manufacturer or Dealer.	Manufactured at	Sampled at
9530	Pillsbury-Washburn Fl. M'ls Co	Minneapolis, Minn.	Camden
9351	Partridge Brothers.		Norway Lake
9531	S. B. & Co	Beardstown, Ill.	Camden
9532	David Stott	Detroit, Mich	Skowhegan
9533	David Stott	Detroit, Mich	Pittsfield
9534	George Ulers Milling Co		Waterville
9535	Voigt Milling Co	Grand Rapids, Mich	Brunswick
9536	Voigt Milling Co	Grand Rapids, Mich	Stroudwater
9362	Voigt Milling Co	Grand Rapids, Mich	Newport
9537	Washburn & Crosby Co	Minneapolis, Minn.	Brunswick
9298	Washburn & Crosby Co	Minneapolis, Minn.	Portland
9297			Brownville
9311			Newport
9313			East Newport
9316			Portland
9325			Otisfield
9331			
9538			South Windham
9539			Bangor
9540			South Brewer
9541			Pittsfield
9542	Ansted and Burke Co	Springfield, Ohio	Foxcroft
9543	C. B. Cummings & Son		Norway
9544	Dow and King	Springfield, Ohio	Readfield
9545	Pillsbury-Washburn Fl. M'ls Co	Minneapolis, Minn.	Fryeburg
9359	Pillsbury-Washburn Fl. M'ls Co	Minneapolis, Minn.	Newport
9546	David Stott	Detroit, Mich	Lewiston
9547	Valley City Milling Co	Grand Rapids, Mich	Hiram
9363	Voigt Milling Co	Grand Rapids, Mich	Newport
9548			Bath
9309			Newport
9310			Newport
9349			Norway
9353			Norway
9360			Newport
9549	Pillsbury-Washburn Flour Mills	Minneapolis, Minn.	Fryeburg
9550	Pillsbury-Washburn Flour Mills	Minneapolis, Minn.	Camden
9299	Pillsbury-Washburn Flour Mills	Minneapolis, Minn.	Waldo Station

ANALYSES OF SAMPLES.

Name of Feed.	Protein.		Fat.		Station number.
	Found—per cent.	Guaranteed—per cent.	Found—per cent.	Guaranteed—per cent.	
Pillsbury's Bran	17.13	....	....	....	9530
Bran	16.13	....	....	....	9351
Bran	15.19	....	....	....	9531
Stott's Pure Winter Wheat Bran	14.94	....	....	....	9532
Stott's Pure Winter Wheat Bran	15.38	....	....	....	9533
Fancy Bran	16.56	....	....	....	9534
Voigt's Choice Winter Wheat Bran	17.81	....	....	....	9535
Voigt's Choice Winter Wheat Bran	16.31	....	....	....	9536
Voigt's Choice Winter Wheat Bran	17.00	....	....	....	9362
Coarse Bran	17.69	....	....	....	9537
Coarse Bran	14.88	....	....	....	9298
Winter Wheat Bran	17.88	....	....	....	9297
Bran	15.13	....	....	....	9311
Bran	15.38	....	....	....	9313
Bran	17.00	....	....	....	9316
Bran	17.13	....	....	....	9325
Bran	16.38	....	....	....	9331
Bran	17.75	....	....	....	9538
Winter Wheat White Bran	15.56	....	....	....	9539
Bran	17.69	....	....	....	9540
Andrew's Fancy Middlings	21.44	....	....	....	9541
Middlings	18.19	....	....	....	9542
Ballard's Middlings	17.81	....	....	....	9543
Winter Wheat Middlings	16.94	....	....	....	9544
Pillsbury's A Middlings	22.19	....	....	....	9545
Pillsbury's Middlings	18.88	....	....	....	9359
Stott's Climax Middlings	18.31	....	....	....	9546
Choice Winter Wheat Middlings	17.88	....	....	....	9547
Voigt's Choice Winter Wheat Middlings	17.50	....	....	....	9363
Middlings	17.69	....	....	....	9548
Middlings	18.00	....	....	....	9309
Middlings	20.63	....	....	....	9310
Middlings	18.56	....	....	....	9349
Middlings	17.56	....	....	....	9353
Red Dog	21.25	....	....	....	9360
Pillsbury's XX Daisy	21.94	....	....	....	9549
Pillsbury's XX Daisy	21.81	....	....	....	9550
Pillsbury's XX Daisy	18.00	....	....	....	9299

SUMMARY OF ANALYSES.

	Number of analyses.		PROTEIN.		FAT.	
			Found—per cent.	Guaranteed—per cent.	Found—per cent.	Guaranteed—per cent.
R. W. Biggs & Co. "Canary" Brand Cotton Seed Meal.	4	Highest	47.06	....	12.58	
		Lowest	46.25	43.00	9.21	9.00
		Average	46.53	.. ..	10.33	
F. W. Brodé & Co. Owl Brand Pure Cotton Seed Meal.	6	Highest	47.75	....	10 39	
		Lowest	43.06	43.00	8.09	9.00
		Average	45.87	....	9.37	
Chapin & Co. Cotton Seed Meal.	1	....	45.63	43.00	8.04	9.00
Doten Grain Co. Cotton Seed Meal.	2	Highest	47.50	....	10.26	
		Lowest	47.13	43.00	9.15	9.00
		Average	47.32	....	9.70	
Humphreys, Goodwin & Co. Dixie Brand Cotton Seed Meal	4	Highest	45.65	....	10.39	
		Lowest	43.88	43.00	8.42	9.00
		Average	44.36	....	9.73	
Hunter Brothers. Cotton Seed Meal.	5	Highest	49.31	....	10.90	
		Lowest	44.88	43.00	8.13	9.00
		Average	46.80	....	10.00	
J. E. Soper & Co. Cotton Seed Meal.	6	Highest	48.63	....	10.30	
		Lowest	42.69	43.00	8.44	9.00
		Average	45.46	....	9.10	
The American Cotton Oil Co. Prime Cotton Seed Meal.	13	Highest	46.94	....	11.27	
		Lowest	40.00	43.00	8.73	9.00
		Average	44.46	....	9.97	
Green Diamond Brand Cotton Seed Meal.	3	Highest	46.88	....	12.91	
		Lowest	45.13	43.00	8.19	9 00
		Average	45.88	....	9.92	
Star Brand Cotton Seed Meal.	2	Highest	47.25	....	11.98	
		Lowest	44.63	43.00	10.11	9.00
		Average	45.94	....	11.05	
Manufacturers unknown. Cotton Seed Meal.	2	Highest	44.75	....	9.54	
		Lowest	43.00	43.00	8.45	9.00
		Average	43.88	....	9.00	
Manufacturers unknown. Cotton Seed Meal.	2	Highest	46.44	....	9.60	
		Lowest	43.06	41.00	8.31	9.00
		Average	44.75	....	8.96	
Manufacturers unknown, unguaranteed. Cotton Seed Meal.	10	Highest	47.44	....	11.68	
		Lowest	44.38	....	7.70	
		Average	45.95	....	9.91	
All samples of Cotton Seed Meal analyzed in 1901.	61	Highest	49.31	43.00	12.91	
		Lowest	40.00	41.00	7.70	9.00
		Average	45.52	....	9.73	
Glucose Sugar Refining Co. Chicago Gluten Meal.	8	Highest	37.38	39.00	6.33	3.00
		Lowest	33.69	38.00	1.27	2.00
		Average	36.28	....	3.83	
Chas. Pope Glucose Co. Cream Gluten Meal.	7	Highest	41.44	....	5.51	
		Lowest	33.38	34.12	1.14	3.20
		Average	37.82	....	4.18	

SUMMARY OF ANALYSES—CONTINUED.

	Number of analyses.		PROTEIN.		FAT.	
			Found—per cent.	Guaranteed—per cent.	Found—per cent.	Guaranteed—per cent.
National Starch Co. King Gluten Meal.	8	Highest	38.00	39.00	4.27	4.30
		Lowest	31.63	32.4	2.25	3.20
		Average	35.51	.. ..	3.19	
Glucose Sugar Refining Co. Davenport Gluten Feed.	3	Highest	26.69	....	4.92	
		Lowest	23.31	27.5	4.67	3.30
		Average	25.08	....	4.84	
Glucose Sugar Refining Co. Buffalo Gluten Feed.	1	....	25.88	27.5	5.55	3.30
National Starch Co. Queen Gluten Feed.	1	....	24.19	23.6	1.95	2.20
Glucose Sugar Refining Co. Germ Oil Meal.	3	Highest	24.06	25.5	12.70	10.50
		Lowest	22.13	25.3	10.30	3.00
		Average	23.64	....	11.14	
American Milling Co. Sucrene Oil Meal.	1	....	28.25	25.00	7.34	3.50
J. W. Barwell. Blatchford's Calf Meal.	1	....	26.00	26.00	4.91	5.00
American Linseed Co. Cleveland Flax Meal.	3	Highest	40.50	....	2.21	
		Lowest	38.69	37.5	1.57	1.00
		Average	39.69	....	1.94	
Hunter Brothers. Linseed Meal.	2	Highest	34.19	....	9.41	
		Lowest	33.88	34.00	9.13	6.50
		Average	34.04	....	9.27	
American Ag. Chem. Co. Bradley's Superior Meat Meal.	2	Highest	52.63	....	9.50	
		Lowest	47.69	40.00	8.88	8.00
		Average	50.16	... .	9.19	
The Bowker Co. Bowker's Animal Meal.	2	Highest	41.38	....	9.34	
		Lowest	37.06	30.00	9.08	5.00
		Average	39.21	....	9.19	
Lowell Fertilizer Co. Old Fashioned Beef Scrap.	1	....	45.81	40.00	25.80	15.00
E. J. Philbrick. Philbrick's Meat Meal.	1	....	29.25			
D. W. Romaine. Smith & Romaine's Evaporated and Boiled Beef and Bone for Poultry.	1	....	38.63	45.00	18.98	15.00
Noyes & Pearson, Beef Scrap.	1	....	65.19	50.00	10.26	9.00
Kendall & Whitney. Beef Scrap.	1	....	62.63	....	18.12	
American Cereal Co. Quaker Dairy Feed.	4	Highest	14.25	... .	4.25	3.25
		Lowest	12.88	13.00	3.83	2.50
		Average	13.86	12.03	4.05	

SUMMARY OF ANALYSES—CONCLUDED.

	Number of analyses.		Protein.		Fat.	
			Found—per cent.	Guaranteed—per cent.	Found—per cent.	Guaranteed—per cent.
American Cereal Co.		Highest	10.94	....	4.65	
Victor Corn and Oat Feed	4	Lowest	8.38	8.23	3.75	3.00
		Average	9.60	....	4.35	
American Cereal Co.						
Vim Oat Feed.	1	....	10.31	6.30	2.83	2.38
American Cereal Co.						
Schumacher’s F. S. Stock Feed	1	....	12.56	10.72	5.07	3.26
Ellsworth & Co.		Highest	12.19	....	3.99	
De-Fi Corn and Oat Feed.	4	Lowest	9.63	8.30	3.19	3.00
		Average	10.50	....	3.55	
Great Western Cereal Co.						
Friends Concentrated Dairy Food.	1	....	8.81	10.9	3.41	3.7
W. H. Haskell & Co.						
Haskell's Oat Feed.	1	....	10.19	12.00	6.10	6.25
H. R. Heath & Son.		Highest	7.81	....	2.89	
Yankee Corn and Oat Feed.	3	Lowest	7.44	8.96	2.73	4.33
		Average	7.60	.. ..	2.83	
The H-O Co.						
The H-O Co.'s Dairy Feed.	1	.. ..	18 81	18.00	4.12	4.50
The H-O Co.'s Horse Feed.	1	....	13.06	12.00	4.74	4.5
The H-O Co.'s Poultry Feed.	1	....	18.19	17.00	5.05	5.5
The H-O Co.'s Scrathing Feed.	1	....	13.19	....	4.17	
Norton, Chapman Co.						
Argyle Oat Feed.	1	....	6.00	12.03	2.09	2.50
Manufacturer unknown.						
Viking Dairy Feed.	1	....	6.06	....	2.63	
Kentucky Milling Co.		Highest	11.81	12.00	3.69	3.5
Jersey Mixed Feed.	4	Lowest	10.00	11.5	3.14	3.00
		Average	10.83	....	3.49	
Manufacturers unknown.		Highest	12.81	. ...	4.38	
Kentucky Mixed Feed.	3	Lowest	11.81	....	3.40	
		Average	12.31	....	3.94	
Manufacturers unknown.		Highest	11.94	....	3.74	
Mixed Feed.	10	Lowest	7.25	....	2.58	
		Average	10.66	....	3.26	

FOOD NUTRIENTS AND THEIR USES.

The valuable ingredients in animal foods are ash or mineral matter, protein, fat and a class of compounds called carbohydrates, of which starch, sugar and crude fiber are the most important examples. Although the ash or mineral matter is essential to the well being of the animal, it is abundantly supplied by most materials one is likely to feed, so what one most needs to consider in buying and using cattle foods are protein, fat and carbohydrates.

A sufficient supply of protein in the food is indispensable. The working animal depends upon it to replenish and repair its working machinery, the growing animal to make muscle and build up its whole system, the sheep to make wool and the milch cow to make the casein and albumen of its milk. No other substance can take its place, or be manufactured into protein by the body. When more protein is fed than is needed for the growth and repair of the body, the excess performs the same functions as the fats and carbohydrates. As a rule, however, this is not an economical use to make of it. It is worth but slightly more than the carbohydrates and about four-tenths as much as fat for this purpose and is commonly the most expensive ingredient to produce or buy.

The office of the other two substances, fat and carbohydrates, is two-fold: First, they serve as fuel and are oxidized or burned in the body to supply heat and force. The fat is worth about two and one-fourth times as much as the carbohydrates for that purpose. Second, they are used as material for making fat.

Most of the home grown food materials are rich in carbohydrates and relatively low in protein. Coarse foods, such as hay, stover, silage, etc., are in general far less digestible than the concentrated foods, such as oil meals, gluten meals, etc.

The intelligent purchaser of concentrated foods will buy, as far as possible, to supplement the home grown foods. Such a man goes to the dealer in feeding stuffs primarily to buy such foods as shall increase the digestible protein in the ration. While all concentrated feeding stuffs carry that which will materially increase the digestible matter of the ration, the oil and gluten meals are the richest in digestible protein, and thus it happens that the intelligent feeder of dairy stock usually buys this class of foods.

The offals (wheat bran, middlings and mixed feeds) from the milling of wheat are not quite so rich in protein, but they carry larger amounts of digestible mineral matters. For these reasons and because they are usually enough lower in price to warrant their purchase, the feeder of the more concentrated foods generally uses these offals.

FEEDS LOW IN PROTEIN.

Very few farmers can afford to buy feeds low in protein and high in carbohydrates at any price at which they have been or are likely to be offered. The farmer should grow all the coarse feeds that he needs. Oat and similar feeds are very much like corn stalks or oat straw in composition. Some of these feeds have cottonseed or other nitrogenous feeding stuffs added to them so that they carry more protein than straight oat feeds, but these mixtures are always more expensive sources of protein than are the glutens, cottonseed and linseed meals. One hundred pounds of an ordinary oat feed has from eight to eleven pounds of protein. At seventy-five cents per hundred the protein costs from seven to nine cents a pound. One hundred pounds of a good gluten meal has from thirty-four to forty per cent of protein. At $1.50 per hundred the protein costs about four cents a pound and it not only costs but half as much per pound as the protein in an oat feed but it is much more digestible. As a source of protein, it would be as good economy to pay $60 a ton for high grade cottonseed meal as to pay $15 a ton for the ordinary oat feed.

COTTONSEED MEAL.

Cottonseed meal is a by-product from the manufacture of cottonseed oil. After the cotton has been taken from the seed in the cotton gin, the remaining down or "linters" and the hard black seed coats or hulls are removed by machinery. The remnants of the seed are cooked, and the oil expressed by high pressure. The resulting cottonseed cake is ground into the bright yellow cottonseed meal of commerce. Such a meal carries from 40 to 50 per cent or even more protein.

Sometimes the black hulls are ground with the cake and a dark colored meal of very inferior feeding value is the result. Not all dark colored meal is necessarily adulterated with hulls, but strictly first-class *fresh* cottonseed meal is always bright and yellow.

The analyses of 61 samples are reported. The guaranteed percentages of protein for the cottenseed meal varied from 41 per cent to 43 per cent; the fat was all guaranteed 9 per cent.

The 61 samples carried from 40 to 49.31 per cent of protein with an average of 45.52 per cent. The fat ranged from 7.70 per cent to 12.91 per cent with an average of 9.73 per cent. No low grade cottonseed meal was found by the inspector and none has been sent by correspondents thus far during the season of 1901-2.

GLUTEN MEALS AND FEEDS.

Gluten meals and gluten feeds are by-products left in the manufacture of starch and glucose from Indian corn. Corn consists largely of starch. The waste product from the manufacture of starch or sugar is relatively much richer in oil and protein than corn. Most factories are removing part of the corn oil from the waste, so that nearly all the gluten meals carry but little oil, e. g., Chicago Gluten Meal, which three years ago carried 7 to 9 per cent of fat, now has from 2.50 to 4 per cent. This reduction in fat is probably an advantage, as feeding corn oil to dairy animals seems to have a tendency to make softer butter. Gluten feeds differ from gluten meal chiefly in that they contain a good deal of the corn bran and hence relatively less of protein and digestible carbohydrates, and more of the indigestible woody fiber.

Chicago Gluten Meal is for the most part guaranteed to carry 38 per cent protein and 2 per cent fat. None of the samples examined came up to the guarantee in protein. The average of the samples examined was nearly 2 per cent below the guarantee. The goods are not as good as last year but resemble those offered in the State in the summer and fall of 1899.

Chas. Pope Glucose Company's Cream Gluten Meal is guaranteed 34.12 per cent protein and 3.20 per cent fat. The lowest sample carried 33.38 per cent and the highest 41.44 per cent protein, with an average of 37.82 per cent. Not only were those goods for the most part above the guaranteed per cent of protein, but they averaged the highest of the gluten meals examined.

The National Starch Company's King Gluten Meal carried guarantees in which the protein ranged from 32.4 to 39 per cent and the fat from 3.2 to 4.3 per cent. The protein in the samples analyzed ranged from 31.63 to 38 per cent. These goods averaged a trifle lower in both protein and fat than Chicago Gluten Meal.

Davenport Gluten Feed and the Buffalo Gluten Feed carried the same guarantee, 27.5 per cent protein and 3.3 per cent fat. All the samples fell a little below in protein and were above the guarantee in fat.

Queen Gluten Feed carried about the same per cent of protein as the other two brands examined but carried a lower guarantee in both protein and fat. It was lower in fat than the others, agreeing quite closely with the guarantee.

Germ Oil Meal is a corn product which has been offered in the State for two or three years. It does not seem to be as generally distributed this year as last. Its composition is practically the same as last year. It carries nearly 2 per cent less protein than the guarantee. As a source of protein it is about as good as rather poor gluten feed and has less than two-thirds the value of good gluten meal. Only one sample of Sucrene oil meal was found. It carried more of protein and fat than called for by the guarantees. In composition it resembles a good gluten feed.

LINSEED MEALS.

Linseed meal is made by grinding flax seed from which the oil has been more or less completely extracted. "Old Process" contains more fat and somewhat less protein than "New Process" linseed meal. The Cleveland Flax Meal is a linseed meal from which the fat has been thoroughly removed by extraction with naptha. The naptha is removed by treatment with steam which leaves a coarse flaky product. These goods are guaranteed to carry 37.5 per cent protein and 1 per cent fat. Each sample examined was above the guarantee.

Two samples of Hunter Bros. Old Process Linseed Meal agreed very closely with the guaranteed protein and carried considerably above the guaranteed 6.5 per cent of fat.

MEAT MEALS AND SCRAPS.

These were with one exception above the guaranteed percentages in protein and fat. Evidently many of the manufacturers place the guarantee sufficiently low so there will be no danger of their goods falling below the guarantees. In compounding rations it will be safer to depend upon the analyses here given than upon the guarantees. The beef scrap of Noyes and Pearson, carrying 65 per cent of protein, is an unusual one.

BY-PRODUCTS OF THE OAT.

In the manufacture of oat products for human food, the kernel of the oat is separated from the hull. Oat hulls are in themselves, low in food value, being worth but little more than the same weight of oat straw. Their value may be materially greater if broken kernels or small oats are ground in with them. Manufacturers of oat products are putting ground oat hulls on the market in many forms and mixtures, such as oat feed, oat chop, corn and oat feed, chop, etc. The bulk of all these materials is ground oat hulls, with admixtures of oat kernels, ground corn, etc. The feeding value of them is variable, and they should never be bought except on a guaranteed composition, and then it should be remembered that the oat hulls are not as digestible as the kernel of oats or other grains. Unscrupulous dealers frequently sell "oat feeds" as ground oats, the unsuspecting buyer thinking he is getting the whole oat meal, which is much more valuable than most oat feeds.

The various oat feeds, corn chops and corn and oat feeds are still used in the State to a large extent. Some of these are the straight refuse from the manufacture of oat meal and others, like the H—O Company's goods, are mixtures of such refuse with other by-products of higher protein content. With a few exceptions they are well up to their respective guarantees and no fault can be found with the manufacturers for their desire to sell these goods, as they are making no claims for nutrients which the goods do not contain. Argyle Oat Feed and Viking Dairy Feed have a feeding value about equal to ground oat straw and the Yankee Corn and Oat Feed is little better. The intelligent buyer of feeding stuffs, who has his barns well filled with hay, corn fodder and silage, will have very little use for these feeds low in protein content.

WHEAT BRAN AND MIDDLINGS.—MIXED FEED.

The results of analyses of samples of wheat offals sent to the Station by correspondents and collected by the inspector are given on pages 48 to 51.

In the Fall of 1899 the State was flooded with low grade, adulterated wheat brans and mixed feeds. Because of the publicity given to these fradulent goods and the cooperation of the best of the large dealers they have quite largely disappeared or are sold under a proper guarantee.

There is so much profit in selling ground corn cobs and broom corn at the price of wheat bran that the consumer must ever be on the watch against this fraud. The safest thing is to buy only well known, reliable brands of this class of goods. The bulletin gives the names and analyses of many manufacturers of high class brans, and other wheat offals. If consumers will see to it that all of this class of feeds which they buy carries the name of the miller there will be little likelihood of their being defrauded. In case of any doubt, mail a sample to the Station and an analyses will be made and the results reported promptly and without any charge.

THE WORKINGS OF THE LAW.

It is now a little over four years since the law regulating the sale of concentrated commercial feeding stuffs went into effect in this State. At its enactment it was the first attempt to regulate the sale of this class of maerials in this country, and it was with some apprehension that its executive officers undertook to see that its provisions were carried out. Some of the large manufacturers threatened that they would not send their goods into the State if they had to come under police regulations, and as the State of Maine was only a small consumer of commercial feeding stuffs, it looked as though it might be an easy matter to carry out this threat. The law had, however, been in existence only a few months before other states began to see the benefits which we were deriving. In less than a year Vermont enacted a law identical with ours and now nearly all of the large dairy States east of the Mississippi have enacted laws based upon the Maine Feed Inspection Law. This action on the part of other States has made the manufacturers much more willing to comply with the requirements of the law, and to-day nearly all the large manufacturing concerns are placing upon their goods guarantees of their protein and fat, whether they are intended for States that have Feed Inspection Laws or have not.

In 1896, so far as the small number of samples sent in by correspondents could indicate, low grade cottonseed meal was abundant in the market. The law went into effect October 1,

1897. The following tabulation shows the number and character of samples of cottonseed meal sent to the Station by correspondents and collected by the inspector, beginning with the winter of 1897-8. Under high grade are included samples carrying from 42 to 52 per cent of protein. With one exception (in 1900-01) all of the low grade samples carried less than 26 per cent protein.

SAMPLES OF COTTONSEED MEAL EXAMINED.

Winter of	High grade.	Low grade.	Total.
1897-8	56	12	68
1898-9	103	4	107
1899-1900	95	4	99
1900-1	57	4*	61
1901-2	58	0	58

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*3 from same lot.

None of the low grade goods in 1897-8 were guaranteed as low grade. Eight of the samples of low grade goods found in the later years were guaranteed to carry less than 25 per cent of protein and the consumer had only himself to blame if he bought them for what they did not claim to be.

That low grade cottonseed meal has practically disappeared from the Maine market is a fact. It is also a fact that this disappearance began after the law was enacted and has steadily progressed. During the present season neither the correspondents of the Station nor its inspector have thus far found a single sample of low grade cottonseed meal in the Maine market. If the law regulating the sale of concentrated feeding stuffs has accomplished nothing else, this driving low grade cottonseed meal out of the Maine market is worth to the agriculture of the State more than the cost of inspection.

Food Frauds and Humbugs.

Although they do not come under the provisions of the Feeding Stuffs Law, there are certain materials of a more or less fraudulent nature offered in our markets to stock men and others about which words of warning offered in the past must be repeated. The most recent is the

"RED ALBUMEN."

In common with poultry feeders and farmers in other parts of the country residents of Maine have recently been somewhat disturbed from their usual mental balance by the exploiting of Red Albumen. The following is from a recent publication of the New York Experiment Station:

"There are at least two preparations sold under the name red albumen, probably more; for the druggists in many places were evidently not supplied with the original material, but realized that the farmers were determined to be 'gold-bricked' anyway and so met the demand by substituting compounds from their own stock. One of the preparations, that reaching the Station under the label of the United States Salyx Company, New Concord, Ohio, has practically no feeding value as it contains only .1 per cent of protein (albumen) the remainder being almost wholly oxide of iron (red paint) and sand. No phosphorus was found, nor was there any evidence of strichnine or the newly discovered (?) 'alequet.' Unless fraud has been worked upon the Salyx Company, this is the original 'red albumen.' If so, instead of being worth 50 or 60 cents a pound, it is worth only from 1 to 2 cents a pound as 'Mineral Red' or 'Ground Iron Ore' used for paint.

"Druggists, or others who have substituted some other product for the original 'red albumen,' have been less conscienceless toward the farmers; for they have sold them an albuminous compound, probably a by-product, which contains 11 or 12 per cent of nitrogen or about 72 per cent protein. This sells for varying prices, depending upon the druggist's mood; but usually at the price fixed for the original article, 50 or 60 cents a pound. Animal meal, which supplies the best of albuminoid matter for poultry, contains more than half as much protein and sells at from 3 to 5 cents a pound."

CONDIMENTAL FOODS.

The subject is an old one. The report of this Station for 1885 discussed this subject and the statements then made of which the following is a type are true to-day. "The foods have no greater nutritive value than the feeding stuffs from which they are made, while the small quantities of fenugreek and sulphur are utterly valueless to a well animal and a poor reliance as a means of curing a sick one. If an animal is well he only needs plenty of good food—if he is sick the wise course is to employ remedial agents suited to the case."

In 1895 in Bulletin 20 Dr. Jordan, at that time director of this Station, summed up all that seemingly need be said in the following

"Facts to be Remembered.

"(1) The mixture of ingredients contained in the ordinary foods comprises all that are known either to practice or science as useful to animal life.

"(2) The ordinary cattle foods supply animal nutrition in the most useful and economical forms.

"(3) Condimental foods are absurd as medicines. If an animal is well no medicine is needed, if ill, remedies adapted to the case should be administered.

"(4) The farmer could manufacture his own "condimental" food at a fraction of their usual cost, by mixing a small amount of such common substances as salt, sulphur, saltpeter, fenugreek, caraway, etc., with the daily ration."

But a fraud dies hard. It is to be hoped that the manufacturers of this class of materials flourish "not on the ignorance of farmers but on that lingering remnant of old times, which made saltpeter and sulphur the universal cure-all for horses and cattle."

The condimental foods most extensively advertised in this State for cattle are Nutriotone, International Stock Food and Baum's Stock Food. Mr. Winton, the expert of the Connecticut Experiment Station, is the only station worker in New England with the skill and knowledge necessary to microscopic identification of the various materials which are used in these mixturers, and the following is founded upon the results of his examinations as published in the bulletins and reports of that station.

Nutriotone consists chiefly of linseed meal, corn meal, wheat feed, cottonseed meal, fenugreek, salt, charcoal and sulphur. The International Stock Food consists principally of wheat feed, cayenne, a bitter drug which is probably gentian, salt and charcoal; while Baum's Stock Food is made up of linseed meal, charcoal, salt, Epsom salts and sulphur.

Fortunately in the condimental foods offered, injurious drugs are not found. In addition to common feeding stuffs they consist for the most part of old-time simple remedies of mildly curative powers. The claims made for these materials are as ridiculously extravagant as those made for patent medicines designed for the use of man. The absurd testimonials used in their support are doubtless genuine, but are made by people who can not or do not understand the relations of cause and effect.

These condimental foods are sold in prices ranging from 12 to 25 cents a pound. "As foods pure and simple such prices ($240 to $500 a ton) are ridiculous and prohibitive." If in large lots they can be bought at half or quarter these prices "even such a discount would make them twice as costly as our most expensive standard foods, and no one of them is as concentrated a feed as either cottonseed meal, linseed meal, or gluten meal. There is absolutely no sense in buying at a very high price a lot of drugs of rather mild medicinal properties of unknown kinds and unknown proportions, which claim to take the place of a part of the food and to cure almost every ill and defect that cattle and fowls* are heir to. Salt, charcoal, Epsom salts, sulphur, fenugreek, gentian, cayenne and ginger; they can all be bought in any village, they are already in the stables of many dairy farmers and are used by them. Their value is well known, and also their uselessness for the treatment of serious illnesses."

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*"It is interesting to note that the poultry foods are very like the cattle foods, both in chemical composition and in materials used, so that were the claims of the manufacturers all valid, a condimental food which would cure gaps in chickens might be expected to increase the flow of milk of cows and also to cure hog cholera."

FREE ANALYSIS OF FEEDING STUFFS.

The Station officers take pains to obtain for analysis samples of all feeding stuffs coming under the law, but the co-operation of consumers is essential for the full and timely protection of their interests. Whenever anyone believes that this law is being evaded in any way, he is requested to notify the Director of the Station.

The Station will promptly analyze samples of feeding stuffs taken in accordance with the following directions and report the results without any charge to the interested parties. Dealers and consumers are urged to avail themselves of this offer.

DIRECTIONS FOR SAMPLING.

The sample should fairly represent the feeding stuff and is best obtained as follows:

Open one or more full and unbroken packages, and mix well together the contents of each for a foot in depth, take out three cupfuls from different parts of the mixed portions of each package, pour them one over another upon a paper, intermix thoroughly and fill a tin spice or baking powder box from the mixture. Upon paper plainly write (1) the name of the goods; (2) the name of the manufacturer; (3) the guaranteed percentages of protein and fat; (4) the name and address of the dealer; and (5) the name and address of the sender. Securely wrap the box and description of sample in paper and send by mail to the

Agricultural Experiment Station,
Orono, Maine.

LIST OF BULLETINS PUBLISHED IN 1901.

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70 Oats as Grain and Fodder.
71 Feeding Stuff Inspection.
72 Fertilizer Inspection.
73 Experiments with Fungicides upon Potatoes in 1900. How to Fight Potato Enemies.
74 The Manurial Value of Ashes, Mucks, Sea-weeds and Bone.
75 Analyses of Miscellaneous Food Materials.
76 The Blueberry.
77 Fertilizer Inspection.
78 Finances, Meteorology, Index.

Copies of the above will be sent free on application to any address in Maine. A list of earlier Station publications which are still available for distribution can be had on application.